



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0011; Project Identifier MCAI-2021-00485-T; Amendment 39-22166; AD 2022-18-15]**

**RIN 2120-AA64**

**Airworthiness Directives; MHI RJ Aviation ULC (Type Certificate Previously Held by Bombardier, Inc.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain MHI RJ Aviation ULC Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, Model CL-600-2C10 (Regional Jet Series 700, 701 & 702) airplanes, Model CL-600-2C11 (Regional Jet Series 550) airplanes, Model CL-600-2D15 (Regional Jet Series 705) airplanes, Model CL-600-2D24 (Regional Jet Series 900) airplanes, and Model CL-600-2E25 (Regional Jet Series 1000) airplanes. This AD was prompted by reports of corrosion on fuel clamshell couplings installed in the fuel tank, and a determination that new or more restrictive airworthiness limitations are necessary. This AD requires removing and replacing the fuel clamshell couplings on certain airplanes, and revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0011; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

*Material Incorporated by Reference:*

- For service information identified in this final rule, contact MHI RJ Aviation Group, Customer Response Center, 3655 Ave. des Grandes-Tourelles, Suite 110, Boisbriand, Québec J7H 0E2 Canada; North America toll-free telephone 833-990-7272 or direct-dial telephone 450-990-7272; fax 514-855-8501; email [thd.crj@mhirj.com](mailto:thd.crj@mhirj.com); internet [mhirj.com](http://mhirj.com).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0011.

**FOR FURTHER INFORMATION CONTACT:** Jiwan Karunatilake, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email [9-avs-nyacocos@faa.gov](mailto:9-avs-nyacocos@faa.gov).

**SUPPLEMENTARY INFORMATION:**

## Background

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued TCCA AD CF-2021-16, dated April 26, 2021 (TCCA AD CF-2021-16) (also referred to as the Mandatory Continuing Airworthiness Information, or the MCAI), to correct an unsafe condition for certain MHI RJ Aviation ULC Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, Model CL-600-2C10 (Regional Jet Series 700, 701 & 702) airplanes, Model CL-600-2C11 (Regional Jet Series 550) airplanes, Model CL-600-2D15 (Regional Jet Series 705) airplanes, Model CL-600-2D24 (Regional Jet Series 900) airplanes, and Model CL-600-2E25 (Regional Jet Series 1000) airplanes. You may examine the MCAI in the AD docket on the internet at [regulations.gov](https://www.regulations.gov) by searching for and locating Docket No. FAA-2022-0011.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain MHI RJ Aviation ULC Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, Model CL-600-2C10 (Regional Jet Series 700, 701 & 702) airplanes, Model CL-600-2C11 (Regional Jet Series 550) airplanes, Model CL-600-2D15 (Regional Jet Series 705) airplanes, Model CL-600-2D24 (Regional Jet Series 900) airplanes, and Model CL-600-2E25 (Regional Jet Series 1000) airplanes. The NPRM published in the *Federal Register* on January 25, 2022 (87 FR 3716). The NPRM was prompted by reports of corrosion on fuel clamshell couplings installed in the fuel tank, and a determination that new or more restrictive airworthiness limitations are necessary. The NPRM proposed to require removing and replacing the fuel clamshell couplings on certain airplanes, and revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations. The FAA is issuing this AD to address corroded fuel clamshell couplings in the fuel tank, which, if not removed and replaced, could reduce the ability of the fuel coupling to conduct lightning current and possibly lead to arcing and subsequent fuel

tank ignition in the event of a lightning strike. See the MCAI for additional background information.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received a comment from the Air Line Pilots Association, International (ALPA) who supported the NPRM without change.

The FAA received one additional comment from MHI RJ Aviation. The following presents the comment received on the NPRM and the FAA's response.

### **Request for Clarification for Incorporating Temporary Revisions (TRs)**

MHI RJ Aviation requested that the proposed AD be revised to include provisional statement allowing the incorporation of TRs in their respective manuals. MHI RJ Aviation conceded that the provision that allows this may be included in paragraph (k) of the proposed AD, but noted that it is not clear. MHI RJ Aviation requested that the FAA consider adding a provision to avoid requests for alternative methods of compliance (AMOCs) from operators. MHI RJ Aviation provided the status of each TR and whether or not the information in the TR has been incorporated into the MHI RJ Maintenance Requirements Manual (MRM).

The FAA agrees to clarify. Paragraphs (h) and (j) of this AD require operators to “incorporate the information specified in” CRJ Series Regional Jet TR ALI-0740, dated October 13, 2020; CRJ Series Regional Jet TR ALI-0741, dated October 13, 2020; CRJ700/900/1000 Series Regional Jet TR ALI-0751, dated April 8, 2021; TR 2S4-002, dated September 1, 2021; and TR 2S4-003, dated September 1, 2021. Therefore, as long as the information in the applicable MRM is identical to the information in the applicable TR, the operator may incorporate either the applicable MRM or the applicable TR to show compliance with this AD. The FAA has not changed this AD in this regard.

## **Conclusion**

The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting this AD as proposed. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products.

## **Related Service Information under 1 CFR Part 51**

MHI RJ Aviation has issued Service Bulletin 601R-28-068, Revision A, dated December 21, 2020; and Service Bulletin 670BA-28-041, Revision B, dated January 27, 2021. This service information describes procedures for removing and replacing the fuel clamshell couplings. These documents are distinct because they apply to different airplane models.

MHI RJ Aviation has also issued TR 2S4-002, dated September 1, 2021. This service information describes a Critical Design Configuration Control Limitation (CDCCL) item for bonding of fuel and vent lines for lightning protection to preclude a spark.

MHI RJ Aviation has also issued the following TRs, which describe airworthiness limitations for fuel tank systems.

- TR 2S4-003, dated September 1, 2021; CRJ Series Regional Jet TR ALI-0741, dated October 13, 2020; and CRJ700/900/1000 Series Regional Jet TR ALI-0751, dated April 8, 2021, which describe a procedure for removing and replacing self-bonding couplings in the fuel tank.

- CRJ Series Regional Jet TR ALI-0740, dated October 13, 2020, which describes a CDCCL item for bonding of fuel and vent lines for lightning protection to preclude a spark.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Costs of Compliance**

The FAA estimates that this AD affects 914 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

#### **Estimated costs for required actions\***

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Up to 21 work-hours X \$85 per hour = \$1,785	Up to \$5,837	Up to \$7,622	Up to \$6,966,508

\*Table does not include estimated costs for revising the maintenance/inspection program.

The FAA has determined that revising the maintenance or inspection program takes an average of 90 work-hours per operator, although the FAA recognizes that this number may vary from operator to operator. In the past, the FAA has estimated that this action takes 1 work-hour per airplane. Since operators incorporate maintenance or inspection program changes for their affected fleet(s), the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, the FAA estimates the total cost per operator to be \$7,650 (90 work-hours x \$85 per work-hour).

According to the manufacturer, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all known costs in the cost estimate.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII,

Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-18-15 MHI RJ Aviation ULC (Type Certificate Previously Held by  
Bombardier, Inc.): Amendment 39-22166; Docket No. FAA-2022-0011; Project  
Identifier MCAI-2021-00485-T.**

**(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER  
DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to the MHI RJ Aviation ULC airplanes, certificated in any  
category, identified in paragraphs (c)(1) through (4) of this AD.

(1) Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, serial  
numbers 7002 through 7990 inclusive and 8000 through 8112 inclusive.

(2) Model CL-600-2C10 (Regional Jet Series 700, 701 & 702) and CL-600-2C11  
(Regional Jet Series 550) airplanes, serial numbers 10002 through 10347 inclusive.

(3) Model CL-600-2D15 (Regional Jet Series 705) and CL-600-2D24 (Regional  
Jet Series 900) airplanes, serial numbers 15001 through 15499 inclusive.

(4) Model CL-600-2E25 (Regional Jet Series 1000) airplanes, serial numbers  
19001 through 19064 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 28, Fuel.

**(e) Reason**

This AD was prompted by reports of corrosion on fuel clamshell couplings  
installed in the fuel tank, and a determination that new or more restrictive airworthiness  
limitations are necessary. The FAA is issuing this AD to address corroded fuel clamshell  
couplings in the fuel tank, which, if not removed and replaced, could reduce the ability of



the fuel coupling to conduct lightning current and possibly lead to arcing and subsequent fuel tank ignition in the event of a lightning strike.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Clamshell Coupling Replacement: Model CL-600-2B19 Airplanes**

For Model CL-600-2B19 airplanes: Within 6,600 flight hours or 36 months, whichever occurs first after the effective date of this AD, remove and replace the fuel clamshell couplings, in accordance with Section 2.B. of the Accomplishment Instructions of MHI RJ Service Bulletin 601R-28-068, Revision A, dated December 21, 2020.

**(h) Revision of the Existing Maintenance or Inspection Program: Model CL-600-2B19 Airplanes**

For Model CL-600-2B19 airplanes: Within 60 days after the effective date of this AD, revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in paragraphs (h)(1) and (2) of this AD into Supplement 4 - FAA Fuel System Limitations of Part 2, Airworthiness Requirements, of the MHI RJ Maintenance Requirements Manual (MRM).

(1) Critical Design Configuration Control Limitation (CDCCL) Item as specified in MHI RJ Temporary Revision (TR) 2S4-002, dated September 1, 2021.

(2) Fuel System Limitation Task 28-23-00-605 as specified in MHI RJ TR 2S4-003, dated September 1, 2021.

**(i) Clamshell Coupling Replacement: Model CL-600-2C10, CL-600-2C11, CL-600-2D15, CL-600-2D24, and CL-600-2E25 Airplanes**

For Model CL-600-2C10 and CL-600-2C11 airplanes; Model CL-600-2D15 and CL-600-2D24 airplanes, serial numbers 15001 through 15494 inclusive; and Model CL-600-2E25 airplanes: Within 8,800 flight hours or 48 months, whichever occurs first after the effective date of this AD, replace the fuel clamshell couplings, in accordance with Section 2.B. of the Accomplishment Instructions of MHI RJ Service Bulletin

**(j) Revision of the Existing Maintenance or Inspection Program: Model CL-600-2C10, CL-600-2C11, CL-600-2D15, CL-600-2D24, and CL-600-2E25 Airplanes**

For Model CL-600-2C10, CL-600-2C11, CL-600-2D15, CL-600-2D24, and CL-600-2E25 airplanes: Within 60 days after the effective date of this AD, revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in paragraphs (j)(1) and (2) of this AD.

(1) Fuel System Limitation Task 28-21-15-601 as specified in [MHI RJ] CRJ Series Regional Jet TR ALI-0741, dated October 13, 2020; and Description Applicability for Airworthiness Limitation Task 28-21-15-601 as amended by [MHI RJ] CRJ700/900/1000 Series Regional Jet TR ALI-0751, dated April 8, 2021; in Section 4-28 of Part 2, Airworthiness Requirements, of the MHI RJ MRM.

(2) CDCCL Item as specified in [MHI RJ] CRJ Series Regional Jet TR ALI-0740, dated October 13, 2020, in Section 5-00 of Part 2, Airworthiness Requirements, of the MHI RJ MRM.

**(k) No Alternative Actions, Intervals, or CDCCLs**

After the existing maintenance or inspection program has been revised as required by paragraphs (h) and (j) of this AD, no alternative actions (e.g., inspections), intervals, or CDCCLs may be used unless the actions, intervals, and CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (m)(1) of this AD.

**(l) Credit for Previous Actions**

(1) This paragraph provides credit for actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using MHI RJ Service Bulletin 601R-28-068, dated December 3, 2020.

(2) This paragraph provides credit for actions required by paragraph (i) of this

AD, if those actions were performed before the effective date of this AD using MHI RJ Service Bulletin 670BA-28-041, dated December 3, 2020; or Revision A, dated December 21, 2020.

**(m) Additional AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the New York ACO Branch, mail it to ATTN: Program Manager, Continuing Operational Safety, at the address identified in paragraph (n)(2) of this AD or email to: 9-avs-nyaco-cos@faa.gov. If mailing information, also submit information by email. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or refer to TCCA; or MHI RJ Aviation ULC's TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(n) Additional Information**

(1) Refer to TCCA CF-2021-16, dated April 26, 2021, for related information. This TCCA AD may be found in the AD docket at regulations.gov under Docket No. FAA-2022-0011.

(2) For more information about this AD, contact Jiwan Karunatilake, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart

Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; email 9-avs-nyaco-cos@faa.gov.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (o)(3) and (4) of this AD.

**(o) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) MHI RJ Service Bulletin 601R-28-068, Revision A, dated December 21, 2020.

(ii) MHI RJ Service Bulletin 670BA-28-041, Revision B, dated January 27, 2021.

(iii) MHI RJ Temporary Revision (TR) 2S4-002, dated September 1, 2021.

(iv) MHI RJ TR 2S4-003, dated September 1, 2021.

(v) [MHI RJ] CRJ Series Regional Jet TR ALI-0740, dated October 13, 2020.

(vi) [MHI RJ] CRJ Series Regional Jet TR ALI-0741, dated October 13, 2020.

(vii) [MHI RJ] CRJ700/900/1000 Series Regional Jet TR ALI-0751, dated April 8, 2021.

(3) For MHI RJ Aviation ULC service information identified in this AD, contact MHI RJ Aviation Group, Customer Response Center, 3655 Ave. des Grandes-Tourelles, Suite 110, Boisbriand, Québec J7H 0E2 Canada; North America toll-free telephone 833-990-7272 or direct-dial telephone 450-990-7272; fax 514-855-8501; email [thd.crj@mhirj.com](mailto:thd.crj@mhirj.com); internet [mhirj.com](http://mhirj.com).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [archives.gov/federal-register/cfr/ibr-locations.html](https://archives.gov/federal-register/cfr/ibr-locations.html).

Issued on August 29, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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